#7

PLANT DEVELOPMENT WORKSHOP

FALL 1980

The 7th Plant Development Workshop will be held at McMaster University on Saturday, November 1, 1980. You and your colleagues are invited to attend.

At the March 29th Plant Development Workshop held at the University of Toronto, my proposals for a different style of workshop were approved. I have thus proceeded to organize a workshop that has emphasis on some techniques, methods and approaches that can be used in studying plant development. While the morning session will be invited papers and the afternoon session will feature demonstrations of a number of techniques, there is ample time for an extensive poster session. I thus hope that many posters will be contributed. Posters may deal with any topic in plant development and need not in any way be related to development of a new technique. Please let me know soon if you plan to submit one or more posters and send me an abstract well before the meeting.

Since various pieces of equipment will be operating during the afternoon, it may be possible for a limited number of samples to be prepared or examined. If you have a sample that you would particularly like examined, please contact me in the near future.

A second notice with more details will be mailed to you in October.

I am looking forward to seeing you November 1st.

John Lott

John N.A. Lott
(416) 525-9140, Ext. 4589

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INVITED PAPERS FOR PLANT DEVELOPMENT WORKSHOP

Clearing as a Useful Method for Studies of Plant Tissues

-methods for clearing tissues plus subsequent staining and mounting
-types of organs of tissues that are particularly suitable or give notably poor results.
-materials removed during clearing and interpretation of results.

Histochemical Methods for Botanical Material - Brightfield Microscopy

-some relaible stains available for epoxy resin embedded material (and fresh material).
-specificity of these stains (or lack therof).
-critical aspects of staining procedures.

Histochemical Methods for Botanical Material - Fluorescence Microscopy

-microscope requirements.
-some fluorescent dyes available and problems associated with usage.
-specificity of these fluorescent dyes.
-photography requirements.

Methods for Studying Nuclei

-stains for nuclear structures.
-determinations of nuclear volumes and nuclear areas.
-determination of cell cycles.
-microspectrophotometric measurements of DNA, RNA, proteins.

Protoplasts and Culture Methods for Studies of Plant Development

-protoplast formation and culturing thereof - methodological problems, tissues suitable for protoplast formation.
-fusion of protoplasts.
-types of experiments possible now or likely to be in near future.

Analytical Electron Microscopy

-energy dispersive x-ray analysis and electron energy loss spectroscopy methods.
-problems with preparation of samples.
-sources of artifact.

PRELIMINARY SCHEDULE FOR 7TH PLANT DEVELOPMENT WORKSHOP

9:00 to 9:30 A.M. Coffee and Registration

9:30 to 12:30 P.M. Invited Papers. Topics and speakers include:

- Clearing as a Useful Method for Studies of Plant Tissue (C. Peterson, Waterloo).
- Histochemical Methods for Botanical Material - Brightfield Microscopy (M. McCully, Carleton).
- Histochemical Methods for Botanical Material - Fluorescence Microscopy (L. Peterson, Guelph).
- Methods for Studying Nuclei (D. Davidson, McMaster).
- Protoplasts and Culture Methods for Studies of Plant Development (L. Fowke, Saskatchewan).
- Analytical Electron Microscopy (J. Lott, McMaster).

12:30 to 2:00 P.M. Buffet Lunch and Poster Session

2:00 to 4:30 P.M. Continuation of Poster Session. Demonstrations of Various Methods, Equipment and Approaches including:

- Fluorescence light microscopy
- Energy dispersive x-ray (EDX) analysis mounted on a TEM
- Scanning electron microscopy
- Freeze-fracturing
- Clearing plant tissue
- Preparation of protoplasts
- Photographing meristerms and other small structures
- Analyses of cell structures using the Zeiss MOP system
- STEM with EDX analysis and electron energy loss spectroscopy (EELS)

4:30 to 5:00 P.M. Wrap-up and refreshments

Philips Electronics Ltd. kindly donated money to support this Plant Development Workshop.

McMASTER UNIVERSITY
Department of Biology
1280 Main Street West, Hamilton, Ontario L8S 4K1
Telephone (416) 525-9140

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October 7, 1980

Dear Colleague:

Please find enclosed a schedule for the 7th Plant Development Workshop to be held at McMaster University on Saturday, November 1st. The morning session will be held in the Health Sciences Centre room 1A4. At noon a buffet will be provided at a reasonable cost. A map giving details of how to get to McMaster has been enclosed. For those who have not attended previous workshops I would like to point out that there is no registration fee and that anyone interested in the topics covered is welcome to attend.

I hope that we will have an extensive poster session dealing with a wide range of subject matter. Please notify me if you plan to contribute one or more posters.

In order to have enough food for the luncheon and adequate copies of the methods and techniques handouts I need to know how many people are coming to this workshop. Please get this information to me by Wednesday, October 29th, at the latest.

Sincerely,

John N.A. Lott

John N.A. Lott
416-525-9140 Ext: 4589

JNAL/cm
Encl.

Carl Zeiss Canada Limited and Philips Electronics Ltd. kindly donated money to support this Plant Development Workshop.

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SCHEDULE FOR 7TH PLANT DEVELOPMENT WORKSHOP

9:00 - 9:30 A.M.	Coffee and Registration. Health Sciences Centre Foyer. Near room 1A4.
	Invited papers - Health Sciences Centre - room 1A4.
9:30 - 10:00	Histochemical Methods for Botanical Material - Bright Field Microscopy. (M. McCully, Carleton)
10:00 - 10:30	Histochemical Methods for Botanical Material - Fluorescence Microscopy. (L. Peterson, Guelph)
10:30 - 10:50	Clearing as a Useful Method for Studies of Plant Tissues. (C. Peterson, Waterloo)
10:50 - 11:05	Coffee
11:05 - 11:35	Methods for Studying Nuclei. (D. Davidson, McMaster)
11:35 - 12:05	Protoplasts and Culture Methods for Studies of Plant Development. (L. Fowke, Saskatchewan)
12:05 - 12:30	Analytical Electron Microscopy. (J. Lott, McMaster)
12:30 - 2:00 P.M.	Buffet Lunch and Poster Session - Life Science Building rooms 104 and 105.
2:00 - 4:30	Continuation of Poster Session. Demonstration of various Methods, Equipment and Approaches Including: - Energy dispersive x-ray (EDX) analysis mounted on a TEM. - Light microscopy-fluorescence histochemistry. - Light microscopy-brightfield histochemistry. - Scanning electron microscope. - Freeze-fracturing. - Clearing plant tissues. - Preparation of protoplasts. - Photographing meristems and structures of similar size. - Analyses of cell structures using the Zeiss MOP system. - Scanning transmission electron microscopy (STEM) with EDX analysis and electron energy loss spectroscopy (EELS). - Resin coated photographic papers. Exact times and locations of the various demonstrations will be circulated at the workshop. Coffee and tea will be available throughout the afternoon in Life Sciences 105.
4:30	Wrap-up and refreshments in Life Sciences 213.

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2:00 - 4:30	Poster session continuation. Life Sciences room 104.
2:00 - 4:30	Tea and coffee. Life Sciences room 105.
2:00 - 4:00	Informal sessions showing: Philips scanning electron microscope (Thelma Leech, McMaster) Freeze-etching (Ernie Spitzer, McMaster) Energy dispersive x-ray analysis on TEM (Michael White, McMaster) All in the McMaster Medical Centre EM Lab. Take second floor overpass from Life Sciences to the Medical Centre. Follow signs to room 3N29. Mr. M. Moore will be available to answer questions regarding this equipment.
2:00 - 3:00	Light microscopy - fluorescence histochemistry. L. Peterson, Guelph. Come at start of the session. Life Sciences room 102.

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PLANT DEVELOPMENT WORKSHOP cont'd

2:00 - 3:00	Photographing meristems and structures of similar size. U. Posluszny, Guelph. Life Sciences room 103. Informal sessions.
2:00 - 3:00	Light microscopy - brightfield histochemistry. Hand sections of soybean plants. M. McCully, Carleton. Informal sessions. Life Sciences room 107.
2:30 - 4:00	Vacuum Generators HB5 scanning transmission electron microscope (STEM) with EDX analysis and electron energy loss spectroscopy (EELS). (The only one of its kind in Canada and one of about a dozen in the world). Dr. B. Robertson, Institute of Materials Research, McMaster. Informal sessions. Senior Sciences room B150. Follow signs from Life Sciences Building from the entrance near room 102.
3:00 - 4:30	Analysis of cell structures using the Carl Zeiss MOP system. Demonstration of the basic system about every 10 minutes. The more complex computer based image analysis system, the Zeiss MOP Videoplan, will also be demonstrated. The Videoplan demonstration will begin at 3:00 and take about 45 minutes. Extensive programme evaluation will be conducted if desired following the demonstration. B. Michaelis & B. Wehkamp, Carl Zeiss. Life Sciences room 108.
3:15 - 4:15	Resin Coated Photographic Papers. J. Lott, McMaster. Informal sessions with demonstrations lasting about 10 minutes. Life Science Building room 103.
3:30 - 4:30	Isolation of Protoplasts. L. Fowke, University of Saskatchewan. During the afternoon protoplasts will be formed and be ready for viewing. Informal sessions. Life Sciences room 107.
3:30 - 4:15	Clearing of plant tissues. C. Peterson, Waterloo. Come at start of session. /o 2
4:30	Wrap-up and refreshments. Life Science Building room 213.

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